A COMPREHENSIVE GUIDE TO HEALTH EDUCATION AND THE USE OF THE NUTRITION KIT

STATE SECRETARIAT
VOLUNTARY HEALTH ASSOCIATION
OF KARNATAKA

C. S. I. HOSPITAL COMPLEX

COLONEL HILL ROAD **BANGALORE - 560051**

— VHAK was established in 1974 ; it is a registered body under the Karnataka Societies' Registration Act, 1960.

— It is an apex body representing the cause of the voluntary health sector. All voluntary health institutions (and community development projects with a health segment) are eligible to become its members regardless of caste, creed or community.

— The Association is managed by an elected Governing Board and is maintained by finances received from membership fees and donations.

— VHAK is a federal constituent of Voluntary Health Association of India, New Delhi.

INTRODUCTION

This Booklet is written to help the Community Health worker to communicate health, hygiene and nutrition principles to the people.

It is hoped that the use of the Nutrition Kit will lead to a change in attitude and behaviour resulting in healthy families who have been energised by this knowledge.

We gratefully acknowledge the help and guidance of Miss Padmasini Asuri, Sr Rita, Miss Jyothi (Grail) and several others in the preparation and pretesting of the Charts and Booklets.

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A COMPRENSIVE GUIDE TO HEALTH EDUCATION AND THE USE OF THE NUTRITION KIT

PART I

GUIDELINES AS TO HOW TO USE THESE CHARTS

The Voluntary Health Association of Karnataka has produced these Five Charts taking into considerations that these are the important aspects in the field of nutrition, and that community workers should look into these problems. The design is made in the form of a chart and not of a poster.

Hence the following details are given for your guidance :

Guidelines for the Chart Use

1. Please do not display these five charts as posters all together. **These Charts serve as an educational aid for your teaching.**

2. Study the chart carefully -- Each chart has a nutritional significance to communicate -- The Chart is only a starter for your discussion -- **Plan to have a detailed discussion and also any demonstration** on the same topic. This will give a **better understanding** of the problem.

3. While you discuss a problem based on the chart, do not jump from one topic to the other. It may take atleast a week to complete one chart and the related topics.

4. The foods suggested are merely an outline of the local foods of the same group which need to be shown while doing the demonstration.

5. Be always cautious of the price fact and do not suggest ones which may be slightly expensive. But there are certain foods they should definitely consume for better nutrition and these have to be included, A participatory pattern of discussion will enable the group to think of the alternatives.

6. Do remember that these charts are action oriented. The purpose is fulfilled if the mothers consume and act according to the details given with an understanding of why they are doing so.

Following are the charts that are made for these specific problems.

CHART I – TITLE "THE NEEDS OF A PREGNANT MOTHER"

1. **Problems**	**Chart**
Pregnant mother should eat adequately and provide much needed nourishment to the foetus. She does not eat enough and both suffer from nutritional deficiency.	Pregnant mother should eat for two.

The hard core point : Mothers should eat well to keep herself and the baby healthy. Many mothers do not eat well for the fear of over growth foetus in the body and consequent, difficult confinement. Mother should know 1) The foundation of food is very important for the child before it is born ; 2) The food need not be expensive nor new foods. But she must eat little more of cereals or pulses ; 3) Greens are a must. She must eat them atleast thrice/week if not daily.

Demonstrations Required :

1. Quantity of food (addition suggested)

2. Cooked quantity of leafy vegetables.

CHART No. II — TITLE "GIVE THE BABY A GOOD START"

Problem	Chart
The new born child is of less weight and at times sickly. This is due to mother's poor health during pregnancy. She should know how to take care of herself.	Pregnant mother should eat adequately (connected to I chart)
	2. Take adequate rest for the blood circulation.
	3. Protect herself by taking immunisation that is given to the mother known as Tetanus toxid at 7, 8th & 9 months.

The hard core points : A healthy mother can bring forth a healthy child who will be free from illness of the newborn. **On the other hand a sickly mother can expect only a sickly child.**

In order to be healthy follow the rules :

— Eat well, nourishing foods which are not expensive (Chart–I)

— Take rest in between, do not tire yourself.

— Check with doctor and protect your child by protecting yourself.

Special talk on why "tetanus toxoid", what it does, and what diseases it prevents.

CHART No. III — TITLE "IRON AND VITAMIN A ARE OF VITAL IMPORTANCE"

Problem	Chart
Mother is always anaemic. Much effort has been made to prevent this through a iron tablet but her diet itself is deficient in iron. A low weight baby is due to anaemic mother. Anaemia is a dreadful disease. 2. A young child suffers from Vit. A deficiency which affect the eye sight of many young children.	Causes of tiredness. Reason for the poor sight and the foods that she should be consuming i.e. given, as well as what she should give the child.

Demonstration

A talk of Anaemia, followed by a demonstration on leafy vegetable the cost of these dishes and their preparation.

CHART No. IV — TITLE "PREVENT MALNUTRITION IN YOUR CHILD"

Problem

The children are thin built and sickly at times due to inadequate quantity of food child suffers from wasting disease and this situation is aggravated if it has diarrhoea and the child is starved during these days.

Chart

1. Do not starve the child. The mal-nutrition is due to poor feeding and starving the child during fever and diarrhoea. This is a grave situation.

Demonstration :

Type of food to be given during diarrhoea and its administration and the food to be prepared.

CHART No. V — TITLE "A GROWING CHILD NEEDS A BALANCED DIET"

Problem

Child of pre-school age is fed little and follows the schedule of an adult. He is stunted and small made.

Chart

Pre-school child is half an adult. The food at school is given to give extra nourishment. You must feed your child 3–4 times and the school meal should be the fifth meal,

Demonstration :

A complete day's diet of a pre-schooler in comparison to adult ood.

PART II

" NUTRITONAL NEEDS "

India along with many other developing countries has a young population—**42% being under the age of 15 years and 17% under the age of 5 years.**

The problems of **infection** and **nutrition** are great in this group, particularly in children under 5 years, who are experiencing rapid growth and are therefore more vulnerable. Death rate during this age group is high like the birth rate. There is rapid turnover, the new child replacing the old quickly.

Infant mortality is around 90 per 1000 live births on the whole and is much higher in rural than in the urban areas. 40% of all deaths occur under the age of 5 years. The main and immediate causes of deaths are **diarrhoeal disorders** and **respiratory diseases** even though **malnutrition** is an important underlying cause in most cases.

Repeated illness coupled with malnutrition results in stunting and it is feared that children may not be able to achieve their full intellectual potential.

India is a country of villages (600,000) where 80% of our population live. The income levels are low and aboul half of them live below the poverty line.

Several surveys show that large number of peopie eat less food than they need, the worst sufferers being pregnant mothers, lactating mothers and children. This group is called the **vulnerable group.** The child in the womb, and the child at the breast are influenced by the nutrition of their mothers. Thirty percent of school children are malnourished. There are about 100 million pre-school children out of whom 3—4 million suffer from severe types of malnutrition and probably one million die because of this every year.

While poverty is an important limiting factor for buying enough food, the rampant malnutrition is not all due to poverty. There is **widespread ignorance** about the essentials of child care, including nutritional requirements and the common foods that supply the necessary nutrients. Most mothers and health workers have a little idea of how much food a child needs for adequate growth and nutrition and hence the advice given is often conflicting and inaccurate. But often the foods suggested are expensive and beyond the reach of the community. The main purpose of the worker is to emphasise the fact that the child can be adequately nourished with the common household food available, provided he or she is given enough of it.

BALANCED DIET — DIETETICS

A child can live in happiness without many earthly possessions, but not without good health. A healthy and well maintained body becomes the instrument for the highest human achievements. In maintaining good health, the food we eat, the way in which it is cooked and consumed, and the various factors which establish food habits and constitute the nutritional status have a vital part to play.

A well fed individual grumbles less and normally does not fret over small things. Experiments with school children have shown that children taking good food are more alert and learn their lessons better than those getting insufficient or badly combined food, There must be adequate food for all people — adequate both in quantity and quality, Malnutrition arising out of deficiencies is the cause of many diseases. While it is true that there is not enough food at the right price in our country to feed all the people, it is also true that the food being produced is not used in the most profitable manner.

A faulty diet decreases vitality, vigour, longevity and resistance to infection. The application of the principles of dietetics in our daily food raises the standard of health, prevents diseases and promotes psychological well-being. Many of the evil consequences

of malnutrition can be overcome if the existing diet is replaced by a properly planned one. An understanding of the fundamental principles of dietetics and the nutritional processes going on in the human body is necessary for the planning of diets. Since good food is essential for building up healthy bodies one should understand what food is good, what constitutes an adequate diet, the defects in the present diets and how they can affect the health and happiness.

Different foods have different functions inside our body. Some help the body to grow and repair the parts which have been damaged. Some foods produce heat and energy and still others provide strength and protection against diseases. Thus the food we take has three important functions :

1. energy and heat producing
2. body building
3. protective and strengthening

In order to make the human body function in a proper way the man should have proper food. Man by nature can be a vegetarian or non-vegetarian. But his food consists of all six food components namely **Proteins, Carbohydrates, Minerals, Vitamins, Fats and Water.** All these perform the three main functions mentioned above.

Thus, food can be classified into three main groups according to their functions :—

1. Energy giving
2. Body building and repairing foods
3. Protective and regulating foods.

ENERGY GIVING FOODS

The human body requires fuel for the production of energy. The body needs energy for its activities just as a railway engine needs coal to make it go. The human body is never at rest. It is engaged in work, the temperature of the body is kept constant and digestion goes on. The energy required for doing all this work is provided by foods.

Cereals are the main energy giving foods. They are the cheapest AND ONE OF THE BEST FOODS IN THE TASK FOR SUPPLYING ENERGY. They can be easily stored, transported or prepared. Therefore, they predominate the poor mans diet.

Energy giving foods include rice, ragi, wheat, bajra, jowar, maize, sage, tapioca, starch vegetables like the potato, sugars and fats. Energy is supplied by foods like pulses, dals, meat, eggs, and fish but these are expensive.

BODY BUILDING AND REPAIRING

Just as a house is built of wood, bricks, mortar, cement, nails, rod and other materials, so is the human body built of many substances supplied in the food. It is difficult to say which of this building materials is more important than the others, since all are essential and since the absence of any of them weakens the entire body. Protein is the element in food mainly responsible for building up the body and for repairing worn out parts. The foods which contains protein include milk, pulses, grams, legumes, nuts. meat, fish and eggs. Milk, eggs, and fleshy foods are expensive. The lower income groups depends on legumes, pulses. grams and groundnuts for supply of proteins. Groundnuts are a good source of protein as meat. Protein is required in formation of blood and antibodies.

PROTECTIVE AND REGULATORY FOODS

Besides supplying energy and body building factors, it also regulates the functions of the body and protects it from injury and diseases. The main nutrients included in this are water, minerals and vitamins. The function of the nutrients are :

1. Regulating the heart beat
2. Regulation of body temperature
3. Removal of waste products from the body
4. Muscle contraction
5. Control of water balance
6. Clotting of blood.

The vitamins and minerals, though required in small amounts, are very essential to the health and normal working of the body. The importance cannot be judged by the amount.

The bulk of nails used in building a house may be very small compared to the amount of bricks, but nails are an indispensable part. In the same way, the **amount of Iron** required by the body is more important; may be little but no other food substance can replace it.

Calcium: helps in strengthening bones, controlling muscular contractions and heart beat, and clotting blood.

Iodine : helps the thyroid gland to function properly.

Water : is necessary in large amounts for regulating digestion, maintenance of temperature and other body processes.

Vitamins : Play a great role in regulating growth, muscular co-ordination, eyesight, health of skin and teeth, digestion and other body processes. Different types of vitamins like A B C D E & K are there.

The Green leafy vegetables : are cheapest and richest store house of vitamins for the poor man. They supply Iron for blood and are also rich in minerals which build some of the body tissues. Fruits are rich source of Vitamin C. Fruits, vegetables, milk are rich sources of vitamins and minerals.

PART III

ANTENATAL CARE

CARE OF PREGNANT WOMEN

Pregnancy is a crucial period in a woman's life. The health of the pregnant woman has a great bearing on the nutritional status of her offspring.

The food requirements of a pregnant woman are more than those of a non-pregnant woman. The food she eats should be sufficient for maintenance of her health as well as for the growth of the foetus. It is therefore necessary that she increases her food intake.

NUTRITIONAL DISORDERS IN EXPECTANT MOTHERS:

But in practice we see that many pregnant women, especially those of the lower socio-economic groups, subsist on diets which fall far short of the recommended allowances. Very often, diets of pregnant women in our country provide only about 1600—1900 cal., of energy and 30-40 gms. of protein. Also, the diets of these women during pregnancy are rarely different from those consumed at normal times in terms of quality. On the other hand, there exist several taboos and false beliefs regarding the use of specific foodstuffs during pregnancy.

Protein rich foods such as milk or eggs which are known to be nutritious. even when available, are not consumed adequately for the fear that the baby in womb would grow too large and may complicate the delivery. Several other beliefs on the use of other foodstuffs likewise are in existence.

As a result of such inadequate dietery intakes, there is a severe drain of the nutrients from the mother's body. And in the face of ill-spaced pregnancies, the stress on the mother will be very high, with consequent ill effects on her health.

Foremost among the effects of malnutrition during pregnancy is the low gain in body weight of the expectant mother. Further, she falls a victim to many serious nutritional disorders such as anaemia, vitamin deficiencies and calcium deficiency.

POOR WEIGHT GAIN :

The pregnant woman gains weight regularly from around the tenth week of pregnancy. In women of the developed countries and in women of our own country belonging to the well-to-do groups weight gain during pregnancy is of the order of 12-14 kg. Among women of the poorer sections of our country this figure is 6 or 7 kg. Because of the low dietary intake, the Indian woman is not able to store sufficient fat in the body during pregnancy. Another reason for this low weight gain is that these women do not have rest and have to continue working practically till the time of delivery. This activity uses up the available energy. And no reserves will be available for additional energy demands imposed during the later months of pregnancy or at the time of lactation.

PART IV

MAJOR NUTRITIONAL DISORDERS

ANAEMIA :

About 1 in 5 of our expectant mothers suffer from severe degrees of anaemia, as judged from their blood haemoglobin levels. About 25% of maternal deaths are attributable to anaemia. 50–60 % of all pregnant women in the poor income groups have haemoglobin levels below 10 g./100 ml during the last 3 months of pregnancy.

Iron deficiency anaemia is the commonest type in India. It can be caused by deficient intake of iron through the diet. Defective absorption of iron from the intestines can result in an anaemic condition. Loss of iron through infestation is an additional cause. Deficiencies of folic acid and vitamin B 12 also produce anaemia in women. Though folic acid is present in almost all the common, inexpensive vegetables, especially the leafy ones, this vitamin is destroyed through prolonged cooking like deep frying and overboiling.

Anaemic women show pallor and puffiness of the face. Swelling of the feet and legs, chest pain and palpitation are common and in severe cases congestive failure of the heart and death can occur. Haemoglobin levels fall below 10g/100 ml. and changes in bone marrow will be seen in folic acid and vitamin B 12 deficiencies. In complicated cases, toxemia of pregnancy may set in or bleeding from the uterus could lead to the death of the mother as well as that of the foetus. Still births and severe growth retardation of the foetus also result in some.

VITAMIN DEFICIENCIES :

Pregnant women are prone to suffer from deficincies of vitamin B complex.

Vitamin A status is known to deteriorate with the advance of pregnancy. Severe deficiency of this vitamin can result in dryness of

the white portion of the eye (xerosis) and ulceration of the black portion known as keratomalacia. Night blindness and foamy, grey patches (bitot's spots) in the white portion are also common in mild to moderate deficiencies.

VITAMIN B-COMPLEX DEFICIENCY :

Deficiency of vitamin B-Complex is quite common during the last trimester of pregnancy. Ulceration of the corners of the mouth (angular stomatitis), tongue (glossitis) and lips (cheilosis) are common signs of this deficiency. Others may experience tingling and numbness of the extremities (thiamine deficiency) burning sensation of palms and soles, known as burning feet syndrome (deficiency of the B-complex vitamin, pantothenic acid). Vomiting and giddness during early months of pregnancy are known to be produced by vitamin B 6 deficiency.

CALCIUM DEFICIENCY :

Another important nutrient essential during pregnancy is calcium. Either low intake of calcium rich foods or defective absorption of calcium from intestines or inadequate supply of vitamin D can lead to calcium deficiency.

When calcium deficiency is associated with vitamin D deficiency especially in women in the reproductive period, bones get softened and deformed, Due to this condition called Osteomalacia the pregnant women suffer from severe bony pains and can also have limping and inability to get up and walk.

Another bone condition seen in women who have had repeated pregnancies, is known as Osteoporosis. Due to heavy depletion of calcium, such women complain of muscular weakness, show tremors and spasm of extremities. Bones become brittle and are liable to break easily.

Both these conditions can be detected by X-rays.

PREVENTION OF NUTRITIONAL DISORDERS :

In view of their serious consequences. nutrional disorders in expectant mothers should be corrected and in fact adequate preventive care must be taken at the earliest possible opportunity. Preventive steps include nutrition education emphasising importance of balanced diet, proper antenatal care and supplementation with iron, folic acid, vitamin B12, Vitamin A, B complex, and calcium tablets to all pregnant women.

ANTENATAL CARE :

1. Regular visits to the Primary Health Centres for medical check up are necessary. During the first trimester, monthly check up is necessary. During the second and third trimester, fortnightly and later weekly checkups are necessary,

2. The supplements of iron and folic acid tablets given in the Primary Health Centre or by the Auxiliary Nurse Midwife should be collected without fail and taken regularly.

3. Most important is the consumption of a nutritious diet. The diet should contain adequate amounts of cereals, pulses, and green leafy vegetables. If possible, milk, eggs, fruits and fresh foods should be taken.

4. These foods provide the essential nutrients like calories, proteins, vitamins, calcium and iron,

Good health during pregnancy alone is not enough. For successful lactation the mother needs to eat a nutritious diet. The nursing mother needs extra food for adequate production of breastmilk.

PART V

INFANT FEEDING

Breast milk is a nutritious food and meets the baby's requirements fully till the 4th month of life. Later, breast milk alone is not enough to meet the nutritional needs of the growing child. This calls for additional food supplements. If additional foods are not given the baby does not grow properly and can show stunted growth.

WEANING :

The gradual switching over of the child from breast milk alone to other foods is called "weaning".

Most rural Indian mothers do not give supplementary foods because of the fear that infants will not be able to digest solid or even semisolid foods. This is unfortunately a wrong belief. The right type of foods cooked in the right way and introduced gradually are easily digested and will greatly benefit the child.

The first foods added to the child's diet after 4 months can be in the liquid form. Buffalo or cow's milk, mashed vegetables like potatoes, tender beans, carrots and green leafy vegetables can be safely given. Many mothers add too much water to milk thus making it less nutritious. This practice should be discouraged.

Introducing new foods to infants is not always very easy as some infants may not accept them readily ; but the mother should continue to coax the child till he accepts it.

At the age of 5-6 months cereals and millets can be introduced in the form of porridges. Small amounts of pulses should be added to the preparation to make it more nutritious. The belief that pulses are gas producing and cause distension of the stomach should not exclude the use of pulses in infant feeding. Infants tolerate a fairly good amount of pulses. Green leafy vegetables should also be added, since they provide many nutrients like vitamins A & C, Iron and Calcium,

These nutrients are essential for good vision, blood formation and healthy bones. A preparation using cereal, pulses and greens is given below :

KICHEDI :

Rice	...	3½ tablespoons	(50 grams)
Greengram dhal	...	2 tablespoons	(25 grams)
Leafy vegetable (Palak or Amarnath)	...	1 bundle	(15 grams)
Salt	....	As required.	

Method : Rice and dhal are cleaned washed and cooked together. Palak, is cooked and strained through a clean cloth. The vegetable juice is added to the cooked rice-dhal mixture, salt is added and mixed.

Soft, ripe fruits should be mashed and given to the baby. A ripe banana is relished by all babies. Orange and sweet lime juices are good sources of vitamin C. These, however, are more expensive than are green leafy vegetables.

It should be remembered that clean vessels and boiled and cooled water should be used while preparing any food supplement. Hands should be cleaned well before preparing the food.

Eggs and flesh foods can be fed to the infant around the first year of life whenever they are available and can be afforded by the parents. Initially the egg should be given in a soft boiled form.

If the mother is busy with other work and cannot prepare supplements every day she can prepare ready mixes by roasting cereals and millets (like wheat, ragi and bajra and pulses like bengalgram and greengram) and powdering them separately. These powders can be mixed and stored in clean tins for a few months, Small amounts of these powders can be prepared as porridges and fed to babies, An example is given below :

RAGINA :

Ragi	....	4 tablespoons (60 gms)
Bengalgram dhal (roasted)	.....	4 tablespoons (60 gms)
Sugar	.....	3½ tablespoons (50 gms)

Method : Powder all the ingredients and cook in sufficient water, Addition of milk makes the porridge more nutritions,

If the mother had gradually introduced in the infants diet from 6 months onwards the supplementary foods recommended in the previous section, the baby would be receiving all the nutrients essential for growth and development as he approaches one year of age. In the succeeding period of 1 to 2 years the same diet may be continued in slightly increased quantities, reducing at the same time the frequency of breast-feeding to one or two feeds a day.

A three year old child may not eat much more than a baby of 18 months, since the rate of growth between 2–4 years is comparatively slower than that of the infant or the baby between 1 and 2 years of age. The quantity which a child eats depends on a child small helpings and extras if he wants more. The quantity may be increased gradually but the appetite is the best guide as to the amount of food required at any particular period.

Children are susceptible to most diseases until they receive immunity by getting the disease or getting immunization. Immunizations are tamed killed disease germs that are given in a very small dose. Immunizations give a "little disease" without giving the usual symptoms.

When children are not immunized these diseases kill many children and cause severe illness in many more. The village mothers know most of these diseases and are afraid of them. e,g., they consider small pox and measles are caused by goddess 'mata' and that tuberculosis is caused by a spirit, or that tetanus is caused by a devil. They would be pleased to know that immunizations protect and seem to anger the goddess 'mata'

PART VI

IMMUNIZATION

WHY IMMUNIZE ?

In the neonatal period an infant's ability to form antibodies is poor, it is thus little use giving him vaccines in the hope of producing the sort of immunity that largely depends upon the level of circulating antibodies. The immunity to diphtheria, pertussis and tetanus is of this kind. But immunity of a cellular rather than humoral nature is more easily established in the neonate, and BCG, for instance, is best given at birth. Vaccinia is also effective when given at this time, though it is usually given at the age of one month.

A child is born with many circulating antibodies which he acquires passively from his mother during his last months in the womb, These antibodies gradually disappear, until, at the age of about six months they have gone, but, while they last, they protect the child against several diseases among which measles is perhaps the most important. But as long as they last, they make it impossible for the live attenuated type of measles vaccine to multiply in a child tissues and so provide him with the long active immunity which this vaccine is capable of conferring on the older child. A compromise has to be reached between giving the vaccine too early when it will fail to take and giving it so late as to be useless because many children will already have had the disease. Nine months is the best compromise, in some communities perhaps a quarter of the children will already have had the disease by the time they *are this age.*

WHEN AND WHOM TO IMMUNIZE ?

Only healthy children shonld receive immunizations. Children with fever or skin disease should not be given immunizations. When the child is well again, he can then be immunized. We should be very careful and examine a child fully for any skin condition before giving small pox vaccination. If a child has a mild skin conditions, the conditions may become serious after vaccination. A malnourished child is very likely to get an infectious disease and suffer badly. The immunization may make him a little sick and he may lose weight. Because it is more dangerous for a malnourished child to have the real disease and become very sick than to become a little sick from the immunization, you should go ahead and immunize a malnourished child.

SCHEDULE OF IMMUNIZATION FOR CHILDREN

BEFORE BIRTH

AGE	IMMUNIZATION
Mother should receive Tetanus Toxid	
16 - 20 Weekr	Tetanus toxoid 1st dose
20 – 24 Weeks	,, ,, 2nd dose
36 - 38 Weeks	,, ,, 3rd dose

AFTER BIRTH

Within first week	B.C,G. Vaccine
2nd – 3rd months	Small - pox vaccine
4th - 9th months	Diphteria - Pertussis - Tetanus Triple Vaccine 3 doses at an interval of 1-2 months Polio (Trivalent oral vaccine) 3 doses at an interval of 1-2 months, Given together with Triple Vaccine 3 doses at an interval of 1-2 months, Given together with Triple Vaccine
9th – 12th months	Measles vaccine : One dose
18th – 24th months	Diphteria - Pertussis - Tetanua Triple-Vaccine) Polio (Trivolent Oral vaccine) Booster dose one
5th – 6th years	Diphteria - Tetanus (Bivalent Vaccine) Booster dose) Typhoid (Monovalent or bivalent vaccine) one dose, after an interval of 1-2 months the second dose of typhoid vaccine
10th years	Tetanus Toxoid Booster dose. Typhoid (Monovalent or bivalent vaccine) Booster dose
16th years	Tetanus Toxoid Booster dose Typhoid (Monovalent or bivalent vaccine) Booster dose.

HEALTH CELL
LIBRARY

So far we have been dealing with nutritious food and its importance in maintaining the health of diffesent groups of people.

But, many of the people in our country do not realise the importance of cleanliness and sanitation, However effort is required and it is our duty to convince ourselves and the people about the importance of cleanlinees and good sanitation.

Keeping one's self and one's surrounding clean and following proper sanitary practices, helps a lot in preventing a number of diseases which are caused mainly by certain germs. In order to prevent such illness, if the following steps are taken it would help not only to care for their health but they will also help others to be healthy.

PART VII

FOOD HYGIENE

PREVENTIVE MEASURES TO BE TAKEN FOR DISEASE SPREAD BY WATER, FOOD OR MILK

A person with disease that can be spread by water. food and milk passes the disease germs in his stools. People may pass these germs in their stools even though they are not sick. These rules must be be followed by every person at all times in order.

1) Wash hands after passing stool

2) Wash hands before touching food.

3) Put all stools under ground by using a latrine or covering the stool with earth. If there are no latrines people should pass stool in places away from the houses, away from the water supply and should cover his stool with earth. If the patient is too sick to go far, his stools should be mixed with ashes or soil and should be buried away from the water supply.

4) Boil water and milk before drinking.

5) Cover food, water and milk to keep flies away. Flies like dirty places and they land on uncovered stool. They fly to food and carry germs.

PREVENTIVE MEASURES TO BE TAKEN FOR DISEASES SPREAD THROUGH AIR

A person with disease that is spread through the air should :

1) Cover his mouth when coughing or sneezing.

2) Not spit in the street or on the floor of the house, If he has to spit, he should have something to spit in. For example, a clay cup or pot or a paper bag or leaf that can be buried.

3) Have his own dish and glass for eating.

PREVENTIVE MEASURES TO BE TAKEN FOR DISEASES SPREAD BY INSECTS

To prevent a person from getting a disease that is spread by an insect, a person should :

1) Keep open wounds clean and covered.
2) Keep flies away from open wounds.
3) Wipe off discharge from eyes and nose
4) Keep flies away from nose and eyes.
5) Use screens on windows and doors to keep flies and insects away.
6) Keep drains clean.

Malaria, dengue and filaria are carried from person to person by biting mosquitoes. The rules of hygiene to teach a family are ;

1) Do not have pools of water around the houses or in the streets.
2) Use mosquito nets to sleep under.
3) Have screens on windows and doors.
4) Allow the malaria team to spray with D.D.T. to kill mosquitoes
5) Report fever to malaria worker.

PREVENTIVE MEASURES TO BE TAKEN FOR DISEASES SPREAD THROUGH PHYSICAL CONTACT

A person with a disease spread through *close physical contact* should :

1) Avoid close contact even with his family.
2) Use separate cot, clothes and towels.
3) Wash and boil clothes to kill the germs of scabies.
4) Not hold babies and small children.
5) Get treatment for disease.

To prevent the spread of germs *carried by dirty hand* :

1) **Wash hands** before touching a fresh wound.
2) **Wash hands** after touching any infected wound or sore.
3) **Wash hands** before touching or feeding a newborn baby.
4) Do not use hand to wipe eyes.

PART VIII

COMMON DISEASES

WORM INFESTATION

One of the common health hazards among Children in our country is due to worm infestation. This is mainly due to poor environmental sanitation and personal hygiene. There are four of kind wormswhich are commonly found in India. These are : threadworm, hookworm, roundworm and tapeworm. They all live in the intestines and are called parasites, which means that they obtain their food and nourishment at the expense of the person in who they live. Worms do a great deal of harm, and prevent the person in whom they are living from obtaining the full benefit from the food he eats.

RoundWorm : Roundworms are acquired as a rcsult of poor hygiene, improper disposal of se wage, impure water and contaminated vegetables. When stools are passed in the open, the ova of the worms develop into larvae and are ingested along with contaminated water or unwashed root vegetables. Some children acquire the infection through the habit of eating mud. The child initially is very hungry, but later loses appetite, become listless and may develop a protruberant abdomen. A roundworm eats about O. lg of protein per day from tbe intestines, If the worms are in very large number and form bunches, the child may develop acute intestinal obstruction with acute colicky abdominal pain and vomiting. However the common assumption that all abdominal pain in children is due to worms is not true.

There is no truth in the belief that worms produce convulsions in children. The worms may be passed in stools and sometimes may be vomited out.

Treatment: Piperazine. ½ g for each year of the child's life (i.e.) 2.5g for a 5-year old), may be given at bedtime as a single dose. The child will pass the worms the next day. The treatment may be repeated after a week if the infestation is heavy.

Hookworms : This is a serious problem because the worms suck blood from the upper intestines, and this results in iron deficiency anaemia. The infection is acquired from walking barefoot and the larvae in the soil that have hatched from the ova passed in the stool penetrate the skin and enter the body. The most important public health measure is adequate and proper disposal of sewage. Wearing shoes is impractable in rural areas because of the type of work the villagers do, which is mainly agricultural, and also because of the cost involved.

Treatment : Bephenium hydroxynaphtholate is given as a single dose in some sweet drink because of the bitter taste. The dose for a child under 2 years is 2.5 g, and for a child over 2 years is 5 g.

Threadworms : These are more nuisance value than anything else. The only symptoms they cause is local irritation of the anus and itching of the vulva in girls. They may cause bed wetting.

Treatment: Piperazine is the method of choice along with a local soothing ointment. Nails must be cut short and the hands should be washed with body weight as follows :

Weight	Dose
Upto 7 kg	250 gms
7–14 kg	500 gms
15–27 kg	1 g
Over 27 kg	2 g

This is given once a day for seven days before the morning meal.

SKIN INFECTIONS :

Scabies. This may affect the whole family because it spreads by direct contact from one person to another. There is generalised itching and later small pin-head size vesicles develop on the webs of the fingers and the wrist and spread to other parts of the body. Because of the itching the skin is scratched and this results in excoriation and crusting. The face is spared, but in infants the lesions spread quickly and involve the whole body, including the face.

Treatment : Treatment consists of applying benzyl benzoate emulsion 25 per cent to the whole body for 2 to 4 days after a bath. If that is not available 5 per cent sulphur ointment can be used but it may give rise to itching and irritation of the skin. The clothes also start smelling of sulphur.

Pyoderma : This includes pimples, boils, pustules. Some local application like gentian violet 1 per cent, or cetavelon cream. is helpful. In severe case, an antibiotic such as penicillin may have to be given. Importance of bathing and cleanliness should be emphasised. Crust should be removed with 5% copper sulphate solution or with cotton swab soaked in cetavelon lotion.

Sore Eyes : These are very common and are a result of unhygienic conditions, dust flies, etc., The eyes are red and itchy and there is a watery discharge, which later becomes like pus. The eye should be washed repeatedly with clean water, and sulphacetamide drops, 5-10 per cent. put into the eyes 3 to 4 times a day till the infection has been cured.

Fevers : Most of the fevers are caused by a virus. They last for 3 to 4 days and may be accompanied by a cough or cold. Asprin (65 mg per kg per day, or 60 mg per year of child's age per dose) or paractamol (225-250 mg, 2 to 3 times a day) may be given. Keeping the child cool and sponging his body with a wet towel, and then drying it, also brings down the fever. Merely keeping a wet cloth on the forehead is not enough. Unless more body surface is cooled, the fever will not come down.

Malaria : Malaria is another cause of fever. It is more common in the rainy season when the anopheles mosquitoes breed. There is usually rigor and shivering on alternate days. but at times the fever comes on daily or may even be continuous. The liver and spleen becomes enlarged. The disease is confirmed by finding the malaria parasites in the blood slide made from the finger prick.

Treatment : Dosage schedule supplied in the National Malaria Eradication Programme.

On the first day, chloroquin or camoquin is given in the recommended dose, followed by primaquin for 5 days.

Age group	Chloroquin (130 mg tab)	Camoquin (200 mg tab)	Primaquin (2.5 mg tab)
Up to 1 year	½ tab	½ tab	(..... .....)
1 to 4 year	1 tab	¾ tab	1 tab x 5 days
4 to 8 year	2 tab	1½ tab	2 tab x 5 days
8 to 14 year	3 tab	2½ tab	4 tab x 5 days
Adults	4 tab	3 tab	6 tab x 5 days

Prophylaxis of Malaria : Cholorquin in recommended in the following doses once a week.

Upto 1 year: ¼ tab ; 1-2 years: ½ tab : 2-6 years 1 tab above 12 years : 2 tab.

Typhoid : This is one of the commonest fevers, more common in summer but occurs throughout the year. It can lead to prolonged illness and severe complications, particularly in malnourished children. The severe cases have to be admitted to hospital. Danger signs are distension and pain in the abdomen, bleeding from the rectum and alteration of consciousness.

Specific **treatment** is chloramphenicol which should be administered under doctor's advice. The disease can be prevented by immunization with typhoid vaccine.

KWASHIORKOR :

This child is not getting enough food or proteins. The condition is aggravated by Measles, Whooping cough, Chronic diarrhoea. Tuberculosis. This is called wet Malnutrition because his feet, hands and face are swollen. Although he looks fat, he has very little muscles left.

This child needs more foods, rich if protein. Treat the underlying illness.

Malnutrition may cause many different problems in chlldren.

IN MILD CASES	IN MORE SERIOUS CASES
Slower growth	Little or no weight gain
Swollen belly	Swelling of feet and or face
Thin body	Dark spots, bruises or open
Loss of appetite	Peeling sores
Loss of energy	Thiness or loss of hair
Paleness (Anaemia)	Lack of desire to laugh or play
Desire to ear dirt	Sores inside mouth
Sores in corrners of mouth	Failure to develop normal
Frequent colds and	Intelleg
Other infections	Dry eyes Xerosis
Night blindness	Blindness

ANAEMIA:

Common in childhood. Pale Child. Failure to thrive is present. Hookworm is a common cause of anaemia, in bare foot people walking on land that is contaminated with faeces.

For severe cases, plain ferrous sulphate tablets can be used. Treat for hookworm, if positive.

DIET DURING FEVER :

Most mothers think that the child should not be given food during fever. The child may be given rice water or barley water, milk or fruit juice. A lot of money is wasted on fruits like apple, grapes or pomegranate (Bedana Anar), Rice is sometimes allowed in the form of khichri.

If the child's appetite is poor. which often happens during illness, then he should be given frequent feeds of milk and semi solids like porridge, kichedi. soft rice, dal etc. But the trouble frequently is that the child is longing to eat but the mother withholds all food in the belief that it is bad for him. The ehild should be encouraged to eat everything. **Actually his caloric requirements are greater during fever.** If he is disinclined to chew the food it can be made soft for him so that he does not have to exert himself. Adequate water or other fluids should he given to counteract the dehydrating effect of fever. Often the child does not suffer so much due to illness as due to the starvation that so often accompanies it, especially if the fever is a prolonged regard to typhoid fever. There is no harm in giving solid food to a child with typhoid. He can be given rice and chappati or anything else he may wish to eat. Non-vegetarians can eat eggs. fish and meat.

PART IX

GENERAL GROWTH AND DEVELOPMENT OF A CHILD

A healthy child grows steadily, if he eats enough of nutritious food and if he has no serious illness ... a child gains weight each month.

To be a happy child he has to grow

1. Physically
2. Mentally
3. Socially
4. Emotionally
5. Spiritually

Tender Loving Care (T.L.C.) is very essential for the full growth. A child must feel "Wanted" and "Secure".

ROAD TO HEALTH CHART :

When the child grows steadily his weight will be in the "Road to Health" marking.

If there is something wrong in diet or ill health, he will not grow steadily.

Prevention of Malnutrition can be done by taking regular weight and marking on the growth chart.

70% of school children under five years of age are under nourished of which 2% are Kwashiorkor and 4% are Marasmus.

These charts are available from VHAK.

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AND
DOCUMENTATION

MALNUTRITION

To eat the right food and also to eat a balance of different foods the body needs is important.

Malnutrition is often severe in children, who need lots of nutritious food to grow well and stay healthy.

The two forms of severe malnutrition are

Dry Malnutrition (Marasmus)

Wet Malnutrition (Kwashiorkor)

MARASMUS :

The child does not get enough of any kind of food, especially, energy foods.

He is starved, his body is small, very thin, wasted. He is just skin and bone has a face of an old man, always hungry, potbelly, and under weight.

He needs lots of small, frequent feeds.